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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,481	02/21/2002	Fu-Su Lee	67,200-699	1484

7590

07/16/2003

TUNG & ASSOCIATES  
Suite 120  
838 W. Long Lake Road  
Bloomfield Hills, MI 48302

EXAMINER

MOORE, KARLA A

ART UNIT

PAPER NUMBER

1763

DATE MAILED: 07/16/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/081,481

Applicant(s)

LEE ET AL.

Examiner

Karla Moore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 2-21-02
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 7-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-10 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \*   c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-6, drawn to a rapid thermal anneal system with reflective index monitor, classified in class 156, subclass 345.24.
  - II. Claims 7-10, drawn to a method for detecting contamination on a reflector plate situated in a rapid thermal anneal chamber, classified in class 438.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, another materially different apparatus can practice the process as claimed, for instance, one without a plurality of lamps provided in said chamber interior above said reflector plate.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Mr. Randy Tung on 07/02/03 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-6. Affirmation of this election must be made by applicant in replying to this Office action. Claims 7-10 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.
5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 103***

6. Claims 1~~2~~ are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,226,732 to Nakos et al. in view of U.S. Patent No. 5,536,359 to Kawada et al.

7. Nakos et al. disclose a rapid thermal anneal system (column 3, rows 21-25) substantially as claimed and comprising: a chamber wall (Figure 1, 34 and 36) defining a chamber interior; a reflector plate (12) provided in said chamber interior; a plurality of lamps (30) provided in said interior above said reflector plate; at least one monitor opening (46) provided in said chamber wall; a monitor (pyrometer, 48) provided in said at least one opening, respectively, for monitoring a reflective index of said reflector plate (column 4, rows 26-30); a process controller (58, column 3, rows 30-33) operably connected to said reflective index monitor and said plurality of lamps; wherein said reflective index monitor sends a signal to said process controller and said process controller controls/terminates operation of said plurality of lamps.

8. However, Nakos et al. fail to teach control/termination of the plurality of lamps based on deviation of said reflective index from a reflective index control value.

9. Kawada et al. teach monitoring reflective index and controlling processing operations (such as automatic termination and/or start up) based on a deviation of reflective index from a reflective index control value (column 3, row 61, through column 4, row 4 and column 9, rows 30-31) for the purpose of preventing the chamber from functioning at non-ideal conditions (column 12, rows 12-18).

10. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a reflective index monitor for controlling the plurality of lamps in Nakos et al. in order to prevent the chamber from functioning at non-ideal conditions as taught by Kawada et al.

11. With respect to claim 2, which is drawn to providing a plurality of monitor openings, the courts have ruled the mere duplication of parts has no patentable significance unless a new and unexpected result is produced. In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

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12. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakos et al. and Kawada et al. as applied to claims 1-2 above, and further in view of U.S. Patent No. 6,125,789 to Gupta et al.

13. Nakos et al. and Kawada et al. disclose the invention substantially as claimed.

14. However, Kawada et al. fail to teach an alarm operably connected to said monitor.

15. Gupta et al. teach the use of an alarm attached to a monitor for the purpose of indicating an unacceptable condition (such as particle concentration) (column 9, rows 8-24).

16. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided an alarm operably connected to the monitor in Kawada et al. in order to indicate an unacceptable condition, such as particle concentration, as taught by Gupta et al.

17. With respect to claim 4, which is drawn to providing a plurality of monitor openings, the courts have ruled the mere duplication of parts has no patentable significance unless a new and unexpected result is produced. In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

18. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,226,732 to Nakos et al. in view of U.S. Patent No. 5,536,359 to Kawada et al. and U.S. Patent No. 6,125,789 to Gupta et al.

19. Nakos et al. disclose a rapid thermal anneal system (column 3, rows 21-25) a monitor substantially as claimed and comprising: a chamber wall (Figure 1, 34 and 36) defining a chamber interior; a reflector plate (12) provided in said chamber interior; a plurality of lamps (30) provided in said interior above said reflector plate; at least one monitor opening (46) provided in said chamber wall; a monitor (pyrometer, 48) provided in said at least one opening, respectively, for monitoring a reflective index of said reflector plate (column 4, rows 26-30); a process controller (58, column 3, rows 30-33) operably connected to said reflective index monitor and said plurality of lamps; wherein said reflective index monitor sends a signal to said process controller and said process controller controls/terminates operation of said plurality of lamps.

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20. However, Nakos et al. fail to teach control/termination of the plurality of lamps based on deviation of said reflective index from a reflective index control value.

21. Kawada et al. teach monitoring reflective index and controlling processing operations (such as automatic termination and/or start up) based on a deviation of reflective index from a reflective index control value (column 3, row 61, through column 4, row 4 and column 9, rows 30-31) for the purpose of preventing the chamber from functioning at non-ideal conditions (column 12, rows 12-18).

22. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a reflective index monitor for controlling the plurality of lamps in Nakos et al. in order to prevent the chamber from functioning at non-ideal conditions as taught by Kawada et al.

23. Nakos et al. and Kawada et al. disclose the invention substantially as claimed.

24. However, Kawada et al. fail to teach an alarm operably connected to said monitor.

25. Gupta et al. teach the use of an alarm attached to a monitor for the purpose of indicating an unacceptable condition (such as particle concentration) (column 9, rows 8-24).

26. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided an alarm operably connected to the monitor in Kawada et al. in order to indicate an unacceptable condition, such as particle concentration, as taught by Gupta et al.

27. With respect to claim 6, which is drawn to providing a plurality of monitor openings, the courts have ruled the mere duplication of parts has no patentable significance unless a new and unexpected result is produced. In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 703.305.3142. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703.308.1633. The fax phone numbers for the organization where this

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application or proceeding is assigned are 703.872.9310 for regular communications and 703.872.9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0661.

km  
July 10, 2003

*Primary Examiner  
AU 1763  
J. Hamazada*